

ROCKS and MINERALS

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MONTHLY



Edited and Published by
PETER ZODAC

September
1943

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ROCKS and MINERALS

PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

Chips from the Quarry

THREE LETTERS

Likes Present Set-Up of R & M!

Editor R & M:

Perhaps you don't solicit comment from new subscribers, but I feel compelled to "put in my oar" about the idea expressed in the July issue about placing advertisements at the front of the magazine.

This project, in my opinion, is no question at all. If anyone is primarily interested in the advertisements he can turn to them with equal facility in either the front or the back of the magazine. The only thing that I wish to warn against is the scattering of advertisements in with the textual matter. Some magazines "continue" their articles to the back of the magazine, where one must dodge in and out among advertisements in order to read the text of the article. This, I believe, is very distracting. If I want text, I want text. If I want advertisements, I want advertisements. Let's keep them separated.

I bind my mineral magazines in book form for permanent reference value. If I have a lot of advertisements in with them, the value is greatly depreciated; because advertisements are out of date very shortly after publication.

Allow me to congratulate your editors in, so far, keeping your textual pages free of advertisements. Some of the other popular mineral magazines are not so thoughtful.

J. H. Van Nostrand,
Hollywood, Calif.

July 25, 1943.

Suggests Expanded Program!

Editor R & M:

Please accept my congratulations for the splendid issue of *ROCKS AND MINERALS* which have been coming out during the past year. The reading of each issue seems to help keep up the morale in these trying times.

I personally feel that there is a big future for our hobby and chosen avocation and I am wondering if you have given any serious thought to the continuance of the magazine under an expanded program which will keep pace with the post war trend.

I am sure the Old Timers will want to see a continuance of all the present publications in this field, and I believe there is plenty of room for all now in the field. Is it too early to formulate plans for this expansion? Unless you have already done so a start might be made in the direction of gathering the opinions of others along these lines. Perhaps I am talking out of turn.

W. H. Flack
La Porte, Ind.

Aug. 9, 1943.



A Plea for More Articles of the Seaman Type!

Editor R & M:

I should like to express my gratitude for the excellent article on pegmatites, by David M. Seaman, which appeared in the July, 1943, issue of *ROCKS AND MINERALS*. I have learned more from this article about pegmatites, especially their classification, than from all my readings and from courses in geology. Wish we could have more such instructional articles, but I realize that all such articles depend on free-will offerings and unfortunately all persons of scientific knowledge are not equally generous. Can't you persuade some wealthy rock-hound (if such an individual exists) to provide in his will a fund that will enable *ROCKS AND MINERALS* to obtain a large number of such interesting articles for its readers? But, seriously, I think you are doing amazingly well to keep up so consistently the high quality of *ROCKS AND MINERALS* during these troublesome times!

Alfred O. Shedd,
Waltham, Mass.

July 20, 1943.

*Buy War Bonds and Stamps
Safest Investment on Earth*

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Vol. 18, No. 9

((The Official Journal
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ROCKS and MINERALS
ASSOCIATION))

Whole No. 146

THE CALVERT MUSEUM A General Survey, With Some Notes Upon Its Principal Features

A Store-House of Natural Treasure in a Suburb of London, England

The name of the Calvert Museum has a familiar sound in the ears of natural history curators and collectors in both hemispheres, but only to an insignificant minority of scientists is it anything more than a name. As a matter of fact, its extent and worth have always been regarded as highly problematical, and it is doubtful if even the late John Calvert had more than an approximate idea of its value. The British Museum authorities are doubtless aware that it contains many specimens that are without their counterpart in the National Collection—they were outbidden for many of them in open auction. The leading natural history auctioneers of the Metropolis could direct the enquirer thither for unique specimens in a number of "ologies". The late John Ruskin held the collection of agates in the greatest admiration, and many other scientific specialists have made the acquaintance of various samples of its riches. But with these few isolated exceptions, the majority of persons interested in the subjects which are represented therein will learn with surprise that, tucked away in a north-west suburb, there exists a collection which for

the number, variety, beauty, and value of its specimens must rank among the most remarkable private museums of the world. No private collection can boast an assortment of minerals or shells to compare with it, and the number of unique specimens it contains adds enormously to the interest and value of the collection. A list of over fifty names of collectors and museums does not exhaust the sources from which these treasures were amassed.

Over sixty years ago, when the Baltimore collection was inherited by the late John Calvert, it formed a museum of no mean importance, and for more than half a century of his life that enthusiastic student and traveller devoted his energies to adding to it numberless rare and remarkable specimens of natural history that came into the market, or that rewarded the diligent research of his wide travels. The result is seen in the hundreds upon hundreds of cases and cabinets crammed to their utmost capacity with specimens of every sort and variety, and in almost every branch of science. The place is a store-house of natural treasure, a wonderland of the earth's curiosities flung pell-mell upon the floor, and piled to the ceiling in amazing disorder. True, the minerals, so closely packed and indiscriminately placed that the task of inspecting them is fraught with incessant surprises. Thousands of specimens are arranged and labelled, but other thousands are still unclassified, and without descriptions. In some cases, the catalogue of

Editor's Note: See "The Calvert Collection", by John C. Pohl, Jr., which appeared in the Aug., 1943, issue of ROCKS and MINERALS, pp. 240-241. Mr. Pohl describes how this remarkable collection was purchased by the noted dealer, Martin L. Ehrmann, of New York City, who is now in the armed service of our country—a Major in the U. S. Army.

the sale at which these specimens were purchased has been placed in the cabinet that contains them, and left there against the more convenient season when time could be spared for the work of arranging them.

John Calvert As A Collector

How is it, it may be asked, that this vast collection is so little known, and why is it found in this condition? The answer, like the question, is two-fold, and it is very easy of comprehension. The late John Calvert was a collector, pure and simple. Collectors may be divided and sub-divided *ad infinitum*. There are those that collect in order to assist the community by the knowledge that their specimens may help to illustrate, and those that look to their collection to advance their status and position in the scientific world, and those again that collect for the sheer joy of collecting. There are those who classify their specimens for show purposes, and those who arrange them for sale purposes. And, again, there are others for whom possession is the aim and goal of collecting. John Calvert came under the last head in both categories. With him, collecting was a mania. To indulge it he travelled tens of thousands of miles, suffered innumerable hardships, and spent his money, as the phrase has it, like water. And when he had procured the object or specimen he desired to possess, he was content. He did not wish to parade his treasure, or call attention to it, or to himself. He might want it, because it helped to prove a theory of his own, that he would never publish, or because he knew that it was the only specimen of its kind in existence. But whatever was his object, he was content to attain it. To a brother student, or a man who was capable of appreciating his prizes, he was ever willing to lay them open for inspection and dilate on their beauties, but to the merely inquisitive and easily astonished curiosity-monger he was scarcely tolerantly antipathetic. Moreover, he expended so much of this time in collecting that he could spare not the leisure to classify his collection. He was always in-

tending to organize his museum on a thorough and systematic plan, but the opportunity never presented itself; and although he lived to the age of ninety, he died without accomplishing the task.

It is safe to say that, with the exception of one occasion in 1853, when he held for two months what may be termed a scientific conversazione, and made an exhibition of a few of his hoarded treasures, the museum has never been displayed. Among other Royal visitors who inspected the collection during those eight weeks was the Prince Consort, who was so interested in the curiosities that he paid more than one visit to the museum. Since that date, until two years ago, it had been added to year by year, and it now comprises many hundred thousand specimens.

The Minerals

It is difficult to attempt to describe the minerals in the Calvert collection. Indeed, it is difficult to know where to make a commencement. The accumulations of native silver and copper, coppers and irons, are of a rarity and value that entitle them to consideration as separate collections, while the specimens of native silver are fascinating as curiosities, apart from their scientific interest. One wanders from cabinet to cabinet, and gloats over the contents of drawer after drawer until it begins to dawn upon one that if the beginning of this vast concourse of mineral marvels is difficult, the end is unattainable. Here is a slab of native iron, a section of a meteor that John Calvert secured at Dartmoor. This specimen, which is about a foot in diameter, is a fourth part of the "bolt", the remainder of which, in three parts, was divided between prominent scientific institutions, including the Royal School of Mines and the British Museum.

Many of the crystals of iron, and there are hundreds of rare and beautiful specimens, once formed a portion of the celebrated Marryat collection, and they are arranged in the Marryat cabinets, which, in themselves, are of considerable value. The old cabinets, in every variety of size, and shape, and workmanship—

and there must be scores of them in this cabineted bewilderment—are fashioned with the cunning and finish of an art that appears to be lost. The joints are perfect, the wood is tough as iron, the drawers glide in and out at a touch. The ball-bearing workings of modern machinery is not more smooth than the smoothness of this triumph of the joiner's skill.

Unique Specimens

Geologists would, perhaps, contend that it would be as difficult to value the beautiful specimens that they now contain. Here are a number of crystallised fluors, including the St. Gothard pink octahedrons. In the same cabinet we alight upon a collection of uranite specimens, of which some are more valuable than emeralds; and others—bought at auction against the British Museum authorities, by the way—are unique. Among the copper exhibits are several remarkably fine and valuable specimens of diopase, the finest of which was found in the Kirgee desert, of lironite or fibrous copper, and of the red oxide of copper, which is known to mineralogists as cuprite. Not less rare are the magnificent Siberian minerals, and specimens of chessylite and azurite, or blue carbonate of copper, which Mr. Calvert collected in company with Henry Heuland, and which have never been matched up to the present day. In another cabinet we discover a superb collection of gold ore specimens. Many of these are interesting, as being representative of the products of different mines; others on account of their great beauty; and some for the intrinsic richness of the gold they contain. Thousands of these mineral treasures were acquired by John Calvert during his extensive wanderings in Australia, North and South America, Africa, and Siberia, and between three and four hundred collections have been acquired or picked over to contribute to this great accumulation.

The array of native silver is beautiful in itself, though its beauty is doubtless its least attractive property to the scientific mind. The samples from Broken Hill are numerous, and of great rarity, and the

wonderful contortions into which Nature has tied and twisted some of the other specimens renders them extremely curious, if not unique.

Precious Stones

Precious stones form another considerable department of the museum. In the cabinet labelled "Diamonds", we have diamond crystals, free and in the matrix, specimens of associated rocks, washings and examples of cascalthas and itacolumite, some illustrative specimens from the Cape mines, and a very large series from Brazil, which includes the extensive and valuable collection by J. F. Warne: besides an interesting set of models of the celebrated diamonds of the world. Then there is a choice assortment of alexandrites (cymophane) of various tints and shapes, emeralds of good color in the matrix, and in crystal, polished and in the rough, a collection of beautiful crystals of beryl from many localities, rubies, handsome Brazilian topazes, sapphires, and a great variety of other precious stones.

Some Wonderful Quartz Crystals

All kinds of rare and curious objects are constantly attracting our attention, and the projected "run round" grows into a protracted visit; and yet at the end we have done no more than glance into the shop window of this wonderful storehouse. Remarkable transparent quartz crystals and chalcedonic amygdaloids, both of which varieties contained water, are greatly interesting, but their interest to the general observer pales before that of some of the other goods in the collection. The rich burnt sienna-tinted sardonyx, a portion of a geode of a mammalated structure, and the chalcedonic geode beside it, were both collected by Tavernier during his visits in India and Persia. The latter, aptly called the "cavern of delight", is a thing of exquisite beauty which once reposed in a Persian mosque. The floor of the interior is level, whilst the top and sides are mammalated, and the coloring consists of parallel tints of sea-green tints of varying depths and tones. The sardonyx specimen is valuable on account of its coloring. Burnt

Sienna is one of the rarest colors to be found in Chalcedony, and consequently one of the most greatly prized by the ancient orientals. Another wonderfully illustrative and educational specimen is about two feet long. One end is broken off to show the internal mass of large calcite crystals. This is one of the largest amygdaloids known. Here is a geode of agate, with a crystallised amethystine centre, and some chalcedonic stalactites showing concentric lines, taken from the centre of agate geodes. A very large quartz crystal is remarkable on account of the flaws and markings by which it is covered, and which were no doubt made the most of in the mystic rites of the ancient priests who originally discovered it.

Unique Collection of *Lusus Naturae*

A peculiarly interesting and particularly beautiful feature of this museum is the unique collection of *Lusus Naturae*, or Natural Portraits in Stone, have always been highly esteemed by scientists and collectors, but fine specimens are so rare that the general public have enjoyed but few opportunities of becoming familiar with this remarkable phase of nature's



Marie Antoinette in Serpentine Marble

This fine specimen has been acquired by the noted collector, Mr. John Charles Pohl, Jr.

handiwork. In the form of moss-agates, every museum can show samples of accidental artistry; but the few existing pictures in pebble, marble, or jasper occupy a position similar in the scientific work to that accorded to the First Folios of Shakespeare in the world of books. The small picture of the face of the Saviour in a fragment of limestone will be remembered as having been exhibited at the Dore Gallery a few years ago. The portrait of Chaucer in a pebble of brown jasper, which is described in Orr's *Circle of the Sciences*, is among the treasures of the National History Museum at South Kensington, and another stone picture is that of the late Queen Victoria in the possession of the Royal College of Science. But more remarkable, because larger and more distinct than any of the foregoing, are the beautiful examples which form part of the Calvert collection. Of these, the prize is a splendidly-developed portrait of Rameses II in Egyptian jasper, which is said to be the most wonderful *Lusus Naturae* known to geologists. The linen in which it was wrapped when it came into the possession of the late John Calvert contained a partly obliterated inscription which was deciphered by Dr. Birch as follows: "All the earth yielded stones to no purpose, but a far land gave up the treasure, and the (Princess?) embraced her (liberated) father". Another extraordinary specimen is a slab of serpentine marble representing the portrait of Marie Antoinette.* Both as a likeness and a work of art this picture is a remarkable natural curiosity. An even more fantastic example is a portrait of an old gipsy, at one time as well known to visitors to Hampstead as is Gipsy Lee at the Devil's Dyke. "Nan", as she was locally called, once told the fortune of John Calvert, who, years after the old lady's death, picked up the flint pebble that contains her image on Hampstead Heath. This specimen, which has been carefully examined and pronounced to be a genuine work of nature, depicts

*Now in the collection of Mr. John Charles Pohl, Jr., of Easton, Penn.

the fortune teller habited in her cap and shawl, with the crescent—the emblem of her craft—perched on her head. Other specimens in this collection include a number of mocha stones, exhibiting in one case two lighthouses with the reflection of their light across the water, and in another a fleet of ships riding at anchor, and an extraordinarily marked piece of jasper, discovered in the valley of the Ashburton, Western Australia, shows the outline and coloring of a zebra. As individual samples of nature's artistic skill these pictures are of the highest value, and as a collection they are simply unique.

A Gigantic Series of Agates

In another apartment of the building, in which this wonderful collection is warehoused, are the agates. They may be said to occur, for they are certainly not arranged for the purpose of display, on yards of rough, wide boarding, which skirts three sides of a spacious room. Not in any private collection, perhaps not in any other collection, can such a gigantic series be seen. There are scores of unpolished specimens that illustrate the formation of the lines, &c., and a magnificent array of polished specimens that illustrate the extremest variety of beauty and color that the minerals attain to. In number, and variety, and beauty they are unequalled, and would reward many collectors for long years of patient toil in their acquirement. But the gem of the collection, the "prize agate", a chalcadonic stalactite, enclosed in an after infiltration of silica, as it has been designated, is more carefully safeguarded in another part of the building. This stone measures, across the polished surface, about twelve by nine inches, and discloses a pattern over four inches in diameter of Nature's skill with the compasses. The lines form a perfect circle so closely packed that they cannot be counted and radiating to a distance from the centre of two inches. This matchless specimen is practically without price.

Rare Fossils and Valuable Curios

The collection of fossils includes the Acton collection with its very extensive manaliferous series, and numbers some 200,000 specimens. Bohemian Trilobites, comprising many of the figured specimens, the very large Dudley tribolite in Perry's Arcana, 1811, and many of the fossils which figure in Buckland's Bridgewater treatise are here to be seen, together with the very fine original *Aspidorhynchus*, speciosus, *acutirostris* Ag. Fig. Type, in excellent condition, from which the casts have been taken that are to be seen in many museums.

Interspersed with these specimens, representative of every branch of natural history, we happen upon some handsome examples of Dresden ware and a series of Etruscan vases that were acquired by the Lords Baltimore some 200 years before the cunning forgeries of the present day were contemplated. Seals and gems, costly and finely engraved, are numerous; there is a set of bronze Persian vases that are said to be very ancient, and the microscope which Captain Cook carried with him on his voyage of discovery in the *Endeavour*. The top of the case still has the ring by which it was suspended in his cabin. A head and horns of a caraboo from Labrador is regarded as the finest known specimen. The late Frank Buckland, who devoted hours of study to this exhibit, declared it possessed forty-two points.

But the hours have slipped away, and our visit must perforce have an end. We have seen enough to fill us with amazement, and to make us wonder, most of all, that this vast collection, in many particulars unique, should not have attained the celebrity it so richly deserves. It is to be hoped that a museum so full of interest and instruction, will, now that the motives which prompted the late owner to avoid publicity for his treasures no longer exist, attain the measure of popularity that has hitherto been denied it.

PARICUTIN, THE WONDER OF THE HEMISPHERE!

By PAUL E. KILLINGER

120 W. Winspear Ave., Buffalo, N. Y.

Part 1. As the volcano appeared on May 9th, 1943.

The Ancients called the god of fire by the name of Vulcan. He was depicted as a fiery, smoky and terrifying personage. A perfect example of his namesake, Volcano, is erupting at this moment in our sister republic of Mexico and here is its story.

On February fifth of this year, a Parangaricutiro Indian was patiently working in a field near the similarly named Tarascan village, in the state of Michoacan. It was about five o'clock in the afternoon and the sun was approaching the surrounding hills when the Indian happened to notice that some of his recently worked areas were smoking and steaming. Being nearly through with his work and somewhat frightened, the native retired to his home. Upon returning to his humble corn field the next day, the fearful Indian was startled to see a gaping hole in the center of his field, which was constantly emitting vapors and at times slight rumblings. The amount of vapor and smoke continually increased until on February twentieth, at five-thirty p.m., the volcano of Paricutin was formally born.

Through successively continual explosions, Paricutin built up a cone which now towers about seven or eight hundred feet above the original level of the corn field. The shape of the cone during the last three months has been changed at times and it was breached once to exclude the first and comparatively small lava flow.

From a few weeks after the first eruption to the present (and to about June 15), the coarse gravel-ash, which now covers an area of about thirty square miles, was shot forth. On the day of my visit there was no dust of any sort falling within a radius of two miles from the crater. It must be noted, however, that a few days before, when a friend of mine visited the volcano, the sand and gravel was raining down in a very heavy

shower all around the crater. It is thought that the wind and air currents have a great deal to do with this day to day change in the amount of ash falling and the area covered.

On our journey to San Juan Parangaricutiro, as far as the road can take us, we first went to sand covered Uruapan, seventeen miles from the volcano. We could see the column of smoke from it slowly rising and spreading into a gigantic cloud at a distance of fifty miles or more. Just outside Uruapan is the rock strewn road which winds through devastated forests and over hills looking like sand dunes to San Juan. Because of the quantities of volcanic sand and gravel continually being rained down upon this area the road was of the worst possible type, with piles of slightly drifted sand and gravel all along it. From what others have told us and also from our own experience, we found that it was best to drive into San Juan about midnight so that a few hours might be spent watching the volcano at night as well as in the daylight.

As it is four miles from San Juan to the hill where the best view of Paricutin is obtained, we rented horses, thereby avoiding a laborious hour's walk through the yielding volcanic gravel.

Before going further I should mention that my companions on this trip were Mr. Otis MacAllister, a founder and honorary president of the Mexican Exploration Club, and a friend, Vincente Arredondo Rochin, both of Mexico City.

At about three o'clock on the morning of May ninth, our party arrived at the almost buried town of San Juan Parangaricutiro. Although the volcano was very audible, we could see no part of the newly formed mountain because of a low hill interposed between us, standing in the town square of San Juan, and the then quite low mountain. We could, however, see the smoke when it was lighted by the incandescent materials

within the crater and being shot from it.

A half hour later this fantastic sight burst forth upon us in all its awesome beauty. The first explosion that we witnessed upon our arrival at the hill which overlooks the lava strewn valley was accompanied by a gigantic geyser of flaming rock which fell and crashed against the cone in a burst of orange-red flame. The flaming stones at times would break forth from the opaque cloud of smoke like a peacock feather flashing in the sun.

Later on, the effect seemed to become more spectacular. Once there were two consecutive plumes of flaming lava thrown a mile or more into the air and against which were silhouetted several small inky clouds. Sometimes the red hot rocks burst forth from behind their enveloping clouds like red rice spewed forth from a gigantic gun. Again, the flashing bombs would burst out from each side of the column of smoke producing a glorious effect. More rarely, the sky above the crater would resemble mottled marble; the orange rocks bursting through the thin wisps of smoke carried out with them.

Forked lightning occurred intermittently in the smoke cloud at quite a distance above the crater of a whitish-yellow color. Less frequently a flash of lightning of a fluorescent blue color arched over or jutted into the crater.

One sight which I thought was the most beautiful and awe-inspiring of all was the one when the whole cone was lighted with pin points of glowing rock from a previous explosion; with the larger rocks smashing and splitting on their journey to the bottom of the cone and the crater spouting a gigantic red geyser five thousand feet into the air.

At dawn the black smoke interspersed with the glowing lava bombs and etched against the azure sky presented another scene fit for the brush of the world's greatest painter.

In the light of day, the entire valley presented a different panorama. Most of the territory surrounding the cone was seen to be covered with the cooling lava from the first flow. As this lava is in

the process of cooling there were numerous fumaroles and gas vents in all parts of this flow. The lava field is, naturally, greatly cracked and was rounded off to look like numerous craggy hills by the large quantities of volcanic ash that have been continually rained down upon it. While I am on the subject of the rain of scoria, I should mention that on March twenty-ninth there was such a heavy fall that artificial light was necessary in San Juan.

As this first lava flow was still in the cooling process the quantities of gas emitted by it were considerable. From the myriads of cracks and crevasses permeating this lava many kinds of mineral-laden gasses were and still are emitted.

To view the valley of Parícutin is a never to be forgotten sight. The cone with its crater continuously belching forth dense smoke and lava bombs is the center piece. The hillocks of gravel-ash with their projecting lava rocks and the numerous fumaroles expelling the whitish or bluish vapors combine to make a never to be forgotten panorama.

First International Photographic Exhibit

"Please keep your pictures of bathing beauties, and send us instead photographs of animals, plants, types of aboriginal peoples, and geological phenomena", is the plea made today by Orr Goodson, acting director of Field Museum of Natural History, Chicago, Ill., to photographers submitting entries for the institution's First International Photographic Exhibit.

Preliminary announcements have brought in a number of entries from both amateurs and professionals, including some pictures of types not considered eligible. The exhibit is to be presented from September 15 to November 15 under the title "Lenses on Nature".

The exhibit will be held in Stanley Field Hall of the museum. All entries must arrive before September 1. Circulars giving full details are available on request to those desiring to submit photographs. The jury of selection is composed of Dr. Fay-Cooper Cole, chairman of the department of anthropology at the University of Chicago; Valentino Sarra, Chicago and New York photographer; Samuel Insull, Jr., a Field Museum trustee; J. P. Wahlman, president of the Fort Dearborn Camera Club; C. E. Brockhausen, past president of the Chicago Camera Club, and Dr. B. E. Dahlgren, chief curator of botany at the museum.

CORK MOUNTING MICROS

By ERNEST MARCELLUS SKEA

Pilgrims Rest, Transvaal, South Africa

Before dealing with the question of cork mounting, the writer wishes to mention that he has never seen any other actual micro mount collection besides his own. It may therefore seem presumptuous that he should air his views about the proper mounting of micro minerals on corks. It is only right, however, that the writer should gratefully acknowledge his indebtedness to the late Dr. L. C. Wills for assistance and guidance in building up a fine collection of micro mineral mounts. It was Dr. Wills who, through correspondence, instructed the writer how to collect, prepare and study micro minerals almost 2 years before the publication of his outstandingly fine article in *ROCKS AND MINERALS* of December, 1931, entitled, "Preparation of Micro Mounts". The writer has lost a good friend and mentor.

Some of the cork mounts received by the writer are certainly far from first rate and in many cases the cork is cheap and nasty. Good quality corks cost so little that it seems a pity to use the inferior ones handled by some manufacturers of food and drink products. The good corks can be trimmed better and more easily than the rubbishy ones.

Why do some collectors not blacken their corks? Again, why do other collectors let the adhesive run onto the sides of the cork and, sometimes, even onto a portion of the crystals above? Is it only mounts for exchange that are thus ill-prepared? The genuine lover of micros uses care in the mounting of his treasures and it is really a treat to receive a well prepared mount that only needs boxing and labelling before finding sanctuary in the micro mount cabinet. Micros set in dental paste, gummy substances, or other unsuitable material, are abhorrent. There is also the possibility of some of the minerals being altered, or spoilt, through chemical action or the absorption of moisture, as a result of the

undesirable mountant made use of. If a micro specimen is worth mounting at all it should be done with the exercise of a little care and patience. The writer uses Durofix, a substance similar to Du Pont's Household Cement, which two adhesives cannot be bettered for micro mounting.

The tops of trimmed corks are often larger in diameter than the specimens adhering to them and this could surely be avoided. After all, it is the specimen one wants to see—not the cork. The area of the specimen should, if possible, overlap the top surface of its cork mount. More drastic trimming of corks is needed at times. Many a nicely set up specimen has come to the writer with a cork base at least three times the spread of the specimen end. To some collectors this will doubtless seem satisfactory enough but the writer prefers to trim back and have almost vertical sides to the cork. It entails more time and effort but the result does give a more pleasing mount. Some of the cork mounts prepared by the writer carry tiny specimens no larger than 1/16th of an inch in size and the bases of the corks do not exceed 1/8th of an inch in diameter, with tops less in size than the specimens they carry. They are beautiful and perfect mounts.

Some delicate specimens travel through the mails better if cork mounted and boxed; but the writer believes that, in the majority of cases, collectors prefer to receive unmounted micro minerals. Sometimes it is possible to trim off excess matrix matter and thereby improve the appearance of the specimen before mounting.

Surely no micro mount collector lacks "delicate finger touch"; therefore for the good of so delightful a hobby let us aim at building up good quality collections in clean, undamaged specimens and pleasing mounts.

NOTES ON MAMMOTH, ARIZONA

By FRANCIS WISE

Recently the attention of many collectors has been drawn to the Mammoth area, Pinal County, in the southern part of Arizona. Actually it is about fifty miles north of Tucson on the south west side of the San Pedro River. As a mineral locality its history dates back many years and in old collections there are often beautiful specimens of wulfenite and vanadinite for which this locality is famous.

For a number of years between 1919 and 1933 the mines were inactive, but with the increase in the value of gold and more recently with the greater demand for metals in war, the camp has been rejuvenated. It has been during the later part of this more recent period of operation that a number of rare minerals in the Mammoth ores came to light. The new interest in this locality is due largely to these minerals rather than to the crystallized wulfenite and vanadinite which commonly occur.

The general mineralogy and geology of Mammoth are described by Nels Peterson; *Geology and Ore Deposits of the Mammoth Mining Camp Area, Pinal County, Arizona*; Arizona Bureau of Mines Bulletin No. 144, but unfortunately the presence of these minerals at Mammoth was unknown at that time. Since then more complete reports covering some of these rare species have been written by other investigators. It is the purpose of this short article to give a general picture of the occurrence.

Diaboleite, an oxychloride of lead and copper, is one of the more abundant of these rare species and occurs rather widely distributed throughout the oxidized ores. It is generally associated with crystals of quartz and cerussite in small cavities in a compact, iron stained quartz as deep azure blue crystal plates. Although the mineral is tetragonal, complete crystals are so rare that it is not easily recognized since linarite, a copper lead sulphate of a similar color, is also peculiar to this same gangue. The

original diaboleite was described from Mendip, England, and the Mammoth material was the first to come out in any quantity.

Of the other rare lead minerals associated with diaboleite, matlockite, an oxychloride of lead, and leadhillite, a sulphato-carbonate of lead, appear to be the more abundant. Matlockite occurs as dark gray to black cleavages with a very high luster similar in appearance to cerussite with which it is often associated. However, it can generally be recognized by its more highly perfect cleavage. Leadhillite usually occurs with diaboleite as small cleavage particles of a white or pale blue color scattered throughout the quartz gangue. A number of specimens of this mineral have been found in pale blue, barrel-shaped crystals up to a centimeter in length. The mineral has a beautiful pearly luster and exhibits a highly perfect cleavage.

Caledonite occurs as small blue-green crystals often with linarite or chrysocolla but more commonly with cerussite and anglesite. One specimen shows a large diaboleite plate partially altered to calledonite and some rather large pure masses of this material have been observed. In addition, mention might be made of hydrocerussite and paralaunite are quite rare at Mammoth but do occur intimately associated with leadhillite. Small crystals of beautiful green diopside are rather common and boleite, phosgenite, and atacamite occur sparingly.

The paragenesis of these Mammoth minerals is extremely complicated and has not been satisfactorily explained. Even the minerals themselves have been incompletely identified, since many occur in such small quantities as not to lend themselves readily to identification. These factors, combined with the genuine rarity of the minerals themselves, make the Mammoth area one of the really outstanding mineral localities of the United States, and one especially well suited for specialized collecting.

MINERALS OF MOUNT DESERT ISLAND, MAINE

By GEORGE H. CHADWICK

"Before-the-war" visitors to Acadia National Park, our only seacoast national park, often stopped in front of the window of a small shop in Bar Harbor, hard by the Western Union sign, to gaze upon some fine blocks of beryl, rose quartz, rubellite in lepidolite and the like, labelled "MAINE MINERALS," and as often departed with the conviction that these had been gathered there on Mount Desert Island. But had they stepped inside and spoken with friendly auburn-haired Mr. Willis, he would have set them straight and perhaps shown them a few minerals actually from the Island.

Prominent among these would have been fine crystals up to three inches and masses of crystals of green microcline (amazonite) from Seawall, mostly from land now belonging to the Park and thus closed to further depredation. (Mr. Willis's material was lawfully secured from sewerpipe ditches in the public campground, no longer accessible.) Without doubt, this is the most notable mineral of the Island, its discovery and description dating back to 1859 (Dr. Charles T. Jackson) but redescribed as a novelty in 1931 by Professor Smith of Union College.

In 1889 Prof. N. S. Shaler made incidental mention of pyrite cubes over an inch in size (I measured one of 42 mm.) in a contact zone at Seal Harbor, on land now belonging to Mr. Nelson Rockefeller, and within the past year this locality has been rediscovered by J. D. Clement, M. D., proprietor of the Seaside Inn overlooking this harbor, an enthusiastic collector and preparateur of gemstones. In his parlors I met the daughter of that master geologist and mineralogist, James D. Dana, now a gracious lady of advancing years.

Next, in interest to visitors generally, is the abundant pistachio-green epidote that fills narrow crevices usually in the red or pink granite, less often in the dark trap dikes or in the bluish volcanic rocks (felsite), but also sometimes re-

places the hornblende of the granite (syenite) and thus produces the red and green rock called unakite. Material ranges all the way from bladed pleochroic crystals nearly an inch long, in sheaves, down to massive light-green densely microscopically felted lumps, all the kinds usually being associated with clear or milky quartz crystals of the same generation, which seems like a chemical anomaly.

A single find of micaceous hematite (specularite) as a drusy coating in fine cracks in the granite on the Cadillac Mountain Park-road has attracted some attention, since it was found by Dean Little of Clark University, but Trefethen's listing of this recently (and of epidote at Thunder Hole) as a collecting locality must be decied, for a heavy fine or imprisonment awaits any American who will stoop to despoil his own park.

In small cavities (a foot to a yard) in pegmatitic streaks in the granite quarries at Hall's Quarry have been found small but pretty crystals of fluorite, amethyst, phantom smoky quartz, orthoclase, another feldspar (pink, pericline?) in parallel groups, and epidote; but also fine large aventurine quartz crystals, of which a particularly handsome specimen (100 by 60 by 50 mm.) has been presented to Acadia Park for the contemplated Museum by Mr. Daniel Harkins, the quarryman who collected it.

At Seawall was observed a remarkable phenomenon—beautiful molds in a parting surface of the Seawall "false-granite" (metasomatized felsite) of numerous huge quartz pyramids, four inches across, the crystals themselves nowhere to be seen, though shapeless masses of milky quartz are common in the rock, along with amazonstone pockets.

The following are the minerals known or reported from the Island: Stibnite (Jackson), Molybdenite (Perkins), Pyrite, Marcasite, Arsenopyrite (Jackson), Halite (in evaporated tide pools), Fluorite, Quartz (rock crystal, amethyst,

smoky, milky, aventurine), Chalcedony, Cacholong, Ice, Hematite, Specularite, Magnetite, Dendrite, Limonite, Wad, Siderite? or perhaps Ankerite, Hydromagnesite? (in serpentine), Orthoclase, Perthite, Microcline, Amazonite, Albite, Oligoclase, Andesine, Labradorite, Diallage, Augite, Acmite (Aegirite), Actinolite, Asbestos? or Chrysotile, Hornblende, Garnet (N. L. Smith), Olivine (Frazer), Zircon, Zoisite (Frazer), Epidote, Allanite-Orthite, (Merrill, Derby), Tourmaline, Muscovite, Sericite, Biotite, Phlogopite?, Clinoclase?, Prochlorite, Serpentine, Chrysotile? or Asbestos, Kaolinite, Titanite-Sphene (Merrill), Apatite (Merrill), and Barite (collected by George A. Llano). Many

of these occur only in small veins, others are merely rock components or rock accessories, none (outside of those discussed above) are such as to attract the general collector for cabinet display.

Microscopically present in the rocks, mostly as alteration products, are Calcite (Dale), and (Alling) Uralite, Clinzoisite, Illite, Antigorite and Montmorillonite, rarely Garnet.

Dr. Jackson's report of magnetite veins up to 8 inches wide has not been verified, nor his rosy hope of large deposits of ore been realized. The granite quarries and the granite mountains with their scenery comprise the mineral industry of Mount Desert; 350,000 visitors per summer "before the war."

State Takes Over Mine for War Use

Mineralogical circles in Connecticut are deeply stirred by the announcement that the state's most famous iron mine has been taken over by the State. On July 22, 1943, Governor Baldwin signed a lease-option with Mrs. Edith M. Stone, owner of the famous deposit, the limonite mine at Ore Hill, in the township of Salisbury. The mine is in the northwestern part of the state, 1.4 miles east of the New York-Connecticut line; U. S. Route 44 runs along its southern edge.

This is an old mine which was extensively worked during the Revolutionary War. So famous was this mine during that trying period in early American history that Gen. Washington and other leaders repeatedly specified "Salisbury iron" for the project of many important items.

For many years the mine had been abandoned and its huge pit filled with water. About two years ago, it was reopened—at least some of the water was pumped out and a little digging done here and there.

To mineral collectors the mine was especially noted for its beautiful turgite and limonite specimens which came out many years ago when the mine was in operation. Naturally present day collectors are eagerly looking for the day when they, too, may be privileged to collect some of these beautiful specimens.

Mr. John M. Ulrich, a member of the Rocks and Minerals Association, of New Haven, but whose summer home is in Botsford, Conn., is

well familiar with the mine and with some of the old miners. He has expressed his reactions to the State's lease of the mine in a most interesting letter to his local paper. This letter appeared in the Fri., July 30, 1943, issue of *The Newtown Bee*. Mr. Ulrich, a consulting geologist, condemns the opening of the mine as a worthless venture—that it would be too costly to operate. The ore body is deep and associated with clay, he points out, and the mine is very, very wet. Furthermore there is no smelter in the state to treat the ore. Thus the cost of sinking a new shaft, the installation of mining and pumping equipment and other incidentals would be tremendous. (A few months after the war is over the mine would be shut down again—perhaps never to be reopened). Mr. Ulrich, therefore, deplors the expenditure of time, effort, and money in an undertaking which would do the state no good.

Vlismas Stock for Sale

The entire lapidary and mineral stock of the late John T. Vlismas, will be placed on sale on Saturday, Sept. 25th, at 10:00 a.m., at 244 E. 77th Street, New York City.

Mr. Vlismas was one of the most colorful figures in mineralogical circles in the East. His stock embraces the finest of gem quality minerals and the latest lapidary equipment. The sale is creating considerable interest and a large number of collectors is expected to attend.

What is your specialty—crystals, gems, rocks, ores? Our dealers have them all and all of good quality at attractive prices.

MINERAL PAPERS

By ROY A. REDFIELD

("Mineral Supply House", Spokane, Wash.)

V. PORTRAIT OF A COLLECTOR

Amateur photographers sometimes play with the idea of a composite picture, made by putting a number of exposures on one negative. The blurred result does not look like any one person, but may have a certain interest in bringing out strongly the traits common to all the persons who posed. In somewhat similar fashion we might build up a mental picture, piling up impressions of our mineral friends for observation of the traits which they show as a class. Shall we try it? This undertaking may require courage; we belong to the class ourselves, you know, and nobody can promise that the result is going to be flattering. But here goes.

The composite your present observer is able to report on is made up of many hundreds of impressions. Looking at it first to gather the merely physical characteristics, we find it hard to say whether the picture inclines more strongly to skirts or to trousers. We are thereby confirmed in the understanding that there are about as many women collectors as men. Whatever the charm may be in minerals as a hobby, it gets the ladies too, and their interest is not by any means limited to beauty of appearance or lapidary finish. They are just as likely to have the purely scientific approach, and are prone to insist on chemical formulas ("What's it made of?")—a trait which may be derived from cookbooks and recipes. The spirit is commendable, anyhow.

Now as to age—and expressly dodging and evading any inference about feminine ages—it would seem that the average male collector is a person not younger than early middle life; his age may run from that point up to a hundred. True, there are some quite young min-

eralogists, but they are exceptional. As a rule the infection develops at a mature age, and remains chronic thereafter.

Who are most subject to it? Physicians, decidedly so, and to a less degree other professional men; business men who are well established and have a bit of leisure; teachers; government employees; housewives; and in general almost any sort of person who has studious or esthetic tastes and a margin of energy not wholly absorbed in breadwinning. It is noticeable that interest in minerals is often linked with a fondness for nature and a zest for hikes and exploring trips. Just as some men carry a gun for an excuse to wander over the hills, there are collectors whose chief pleasure is in getting out into the wild, the specimens they bring back being largely souvenirs of particular good times. Even for the more studious there is always this pleasant association of certain pieces with certain happy trips afield.

Of all the traits we are observing, the most general and marked is—pardon the expression—*Oomph!* The mineral hobbyist is a person who has an endowment of free energy, that is, a certain excess of strength not expended in daily tasks. It is a precious thing indeed to have enough vitality left over for the enjoyment of life itself, and not to have it all consumed in the mere business of living. To some extent this is a matter of native constitution. One thinks of the late Theodore Roosevelt, who in spite of a busy life and the cares of statesmanship was a keen sportsman and naturalist who made a special hobby of birds. Energy brimmed the cup for him; no doubt his surplus vitality was a great factor in his advancement. Many people have this gift of extra strength, they perform as

though they were run by oversize batteries; they enjoy their work and they enjoy their pleasures because they have muscle enough for everything that comes.

But not all the fun of life is enjoyed by the energy-rich, who have so much life they cannot squander it all. There is a bigger group who gain energy for their pleasures by conserving strength. There is this trait of wisdom in our typical collector that he budgets his vitality, consciously or unconsciously, and insists on having some pleasure as he goes along. Hobbies fit into this sensible program because they can be enjoyed a little at a time.

So we find that the collector is a vital sort of person, either because nature was kind or because he or she is wise enough to hoard a little fund of nervous power. This reserve makes possible an exercise of disinterested curiosity. You, the collector, have something to react with. Like a tireless child you expend part of your energy in finding out about things which have nothing to do with your livelihood, but they are things which freshen and broaden you. It is a useful influence in anybody's life to have some motives that are wholly unconnected with money-making or selfish advancement.

Maybe we are going to like this portrait after all. We were just a bit afraid at first of finding some traces of eccentricity. But there is nothing of this kind at all, unless it is eccentric to have a vigorous interest in something unrelated to self. If this is being queer we must admit some other queeresses rather connected with it, and found quite commonly in our collector friends. Having in their life something that is a mild corrective for selfishness, it is not surprising that they are usually kindly and generous people, willing to share, willing to expend time and effort in pleasing others. There are no multi-millionaires among them, and no Hitlers; they do not want to rule the earth, nor to possess it, except in little specimen fragments which they are glad to pass around

and divide up with their friends. It would be hard to imagine such people cooking up a war, or grinding down their fellow-men in sweat-shops.

Furthermore, and as a special phase of the general human decency we have been describing, the mineral collector is a notably honest person who takes a just and conscious pride in his honesty. All the mineral dealers will cheerfully testify to this fact. Cheats and grafters are almost unknown among those who are attracted by this hobby. Perhaps the hard-fisted and scheming sort of people are repelled by such an unworldly interest as nature study. It would indeed be a poor field for avarice. So if your heart is corrupt, brother, and if you want to over-reach and take advantage, better get into some other field; you don't belong with the rock-hounds.

Here it is then, our picture of the mineral collector. Probably it does not do justice to physical charms, considering that about half of our group are of the fair sex. We have been content instead to mark those graces of the heart and mind which are more durable. If you, dear reader, being a mineral enthusiast yourself, would like to test the faithfulness of this portrait, compare it with that one person you know thoroughly—compare it with yourself, at your best. Do this and in spite of your natural modesty we think you will have to admit the likeness.

A Message From Mr. Brock

Mr. C. L. Brock, Manager of the American Mineral Exchange, Houston, Texas, is in Manhattan, Kansas, for a three months training period at the A & M College. This is in line with his work as Senior Inspector on air material for the Army Air Corps.

An assistant is carrying on the mineral business during Mr. Brock's absence. If any delays occur in the filling of orders, collectors will know why Mr. Brock cannot give them his personal attention as in the past. He begs his customers to be patient if they do not receive prompt replies.

THE GEOLOGY OF SPRING MOUNTAIN IN MONTGOMERY COUNTY, PENNSYLVANIA

By **RICHMOND E. MYERS**

Muhlenberg College, Allentown, Penn.

The hill on which Spring Mountain House is built has an interesting geological history. Approximately 200,000,000 years ago, the region in which Schwenksville is now situated stood much higher than at the present. It then formed a great basin reaching on the basis of our present day map from Virginia to the lower Hudson Valley. It was composed of red shales and sandstones which we see today well exposed throughout the area. These rocks were formed from sediments brought down from mountainous areas to the north and the west of the region by streams which flowed into it. Many of the streams never flowed out of this basin, for the climate of this period was very arid, and the water simply evaporated, leaving the sediments gradually to accumulate and in time almost to fill the basin. The prevailing red color found in these rocks today is an indication of the aridity, as the color is the result of complete oxidation which could only have taken place under dry conditions. Geologists call such rocks red beds or continental deposits, as they were not formed by deposition in a sea. Further proof of this is found in the complete absence of marine fossils. The only remnants of former life found in these rocks consist of plant remains and the tracks of land animals such as the dinosaur footprints found near Collegeville several years ago.

Towards the end of this period, which is known to geologists as the Triassic Period of the Mesozoic Era, large masses of molten rock called magma began to push up into the shales and sandstones from great depth. This magma (known as lava if it pours out into the atmosphere) rose in the form of long wall-like structures called dikes or sills. These varied in width from a few feet to several miles, and in length from a few hundred feet to many miles. The magma rose slowly, gradually cooling and slowly

solidifying, giving off vast quantities of gases and hot water bearing many elements in solution, including copper, iron, gold, and other metals. These solutions penetrated the host rock which at the same time was being altered by heat and pressure from soft shales and sandstones into a very hard baked rock. As the solutions moved further away from the magma they cooled and their metallic contents were precipitated in the fractures of the surrounding rock, thus forming mineral deposits. Not far from Spring Mountain House are several copper mines whose ores were thus formed, and at Perkiomenville a host of interesting minerals may readily be found in the Kibelhouse Quarry.

Hardly any of this magma ever reached the surface, but the rock above it was arched up and broken to such an extent that it was attacked readily by the forces of erosion and eventually the then solidified magma was laid bare forming the higher hills of the region. Such a hill is Spring Mountain. The springs from which the mountain receives its name had their origin in this process, for the water finds its way to the surface thru the fractures in the rock that were caused by the intrusion of the magma. These fractures are known as faults and faults serve very often as passageways for ground water to reach the surface.

Diabase Basic Rock of Spring Mountain

The types of rock that resulted from the solidification of this magma are two in number, Diabase and Basalt. Together they are known as Trap Rock. Both are basic rocks, that is, they contain large quantities of iron and magnesium, and very little silica. (Granite is an acid rock containing much silica and rarely iron or magnesium). Basic rocks are dark colored, acid rocks are light colored. Diabase is the type of basic rock that forms Spring Mountain. It is known

commercially, tho inaccurately, as Black Granite. Economically it is important in various ways. The Spring Mountain House and Stone Cottage are built from unfaced boulders of the rock, as are many buildings and fences in the Trap Rock country. Polished, it makes a nice monumental stone. The Shakespeare monument in front of the Philadelphia Public Library at Logan Circle is made from the Diabase. Many years ago it was worked here for Belgian Blocks and used to pave the streets of Philadelphia. Numerous holes on the mountain, long overgrown, testify to that early activity.

Here as everywhere it occurs on the surface as spherical boulders in wooded hilly country. It is very hard and the boulders are the result of weathering. As the magma cooled it shrank, and cracks opened throughout the mass which are called joints. Later as the rock became exposed on the surface rain water entered into these joints and thru alternate freezings and thawings large blocks were loosened from the original mass and eventually broke away. The gravity and other forces tended to move them towards the lower slopes. In time corners broke off. Rock is a poor conductor of heat. During the day the sun would heat the surface of these rocks, but the heat would penetrate only a fraction of an inch. At night this would cool. In daytime it would heat up again. Thus thru millions of alternating freezings and thawings, millions of contractions and expansions would take place, but only in that tiny outer layer of rock, which at last would peel away, and the process would begin again on the newly exposed surface. This gradually reduced the size of the boulders, and tended towards making them round. The process known as exfoliation can be observed in many of the boulders around Spring Mountain House, and even in some of the stones that make up the walls of the building.

Kettle Rock and Ringing Rocks

Two interesting features occur on Spring Mountain. The first of these is Kettle Rock. It is a product of weather-

ing, and in spite of its resemblance to a kettle hole has no connection with the ice age. An erroneous idea is prevalent that the whole of Spring Mountain is a glacial deposit. Nothing could be further from the truth. The nearest point that the ice reached Spring Mountain is in Lehigh County. The other feature, Ringing Rocks, is a patch of Diabase boulders which ring with a bell-like tone when struck with a hammer. There are several such deposits in the Trap Rock hills of Pennsylvania. All have been regarded with much interest. The property of producing the musical tones is due to the structure of the rock rather than its composition. As this area of magma originally cooled, it either cooled much faster or slower than that immediately adjacent to it and thus differed in its internal structure upon solidification.

Perkiomen Creek

Another interesting feature of this region is the valley of the Perkiomen Creek as seen either looking southward from the front porch of the Spring Mountain House, or northward from the lookout on top of the mountain. A cardinal principle of Geology is the fact that a valley is excavated by a stream, but it does not follow that the stream now flowing thru a valley was the one that carved it. It is believed by some students that the present Perkiomen was not the stream that eroded the valley thru which it flows. This assumption is made on the grounds that it is far too small to have done the job of cutting thru the several Trap ridges which it crosses thru fairly narrow ravines or gaps, and developing such a wide valley elsewhere. If not the Perkiomen, what stream might have done the work? The suggestion has been made that the Lehigh River at one time flowed south through Leibert's Gap just west of Emmaus in Lehigh County, and that the Perkiomen Valley was originally the valley of the Lehigh, which stream was later deflected to the northeast at Allentown. This theory has much to support it, but final proof is lacking.

(Continued on Page 278)

Clubs Affiliated With the Rocks and Minerals Association

ARIZONA

Mineralogical Society of Arizona

Geo. G. McKhann, Sec., 909 E. Willetta Street, Phoenix.

Meets at the Arizona Museum in Phoenix on the 1st and 3rd Thursday of each month.

CALIFORNIA

East Bay Mineral Society

Miss Ida Chittock, Sec., 1012 Elbert St., Oakland.

Meets on the 1st and 3rd Thursdays of each month (except July and August), at 8:00 p.m., in the Lincoln School Auditorium, 11th and Jackson Sts., Oakland.

Northern California Mineral Society, Inc.

Mrs. Bernice V. Smith, Sec., 1091 Bush St., San Francisco.

Meets on the 3rd Wednesday of the month at the Public Library, San Francisco, at 8:00 p.m.

Pacific Mineral Society

Margaret Cotton, Sec., 2129—9th Ave., Los Angeles.

Meets on the 2nd Friday of each month at 6:30 p.m., at the Hershey Arms Hotel, 2600 Wilshire Blvd., Los Angeles.

Southwest Mineralogists

Dorothy C. Craig, Corres. Sec., 4139 S. Van Ness Ave., Los Angeles.

Meets every Friday at 8:00 p.m., Harvard Playground, 6120 Denker Ave., Los Angeles.

COLORADO

Canon City Geology Club

F. C. Kessler, Sec., 1020 Macon Ave., Canon City.

Meets on the 1st and 2nd Saturdays of each month at 9:00 a.m. in the High School Building, Canon City.

CONNECTICUT

Bridgeport Mineral Club

Miss Georgianna Seward, Sec., 2859 Main St., Bridgeport.

Meets in the Bridgeport Public Library on the 3rd Monday of the month.

Mineralogical Club of Hartford

Miss Gladys L. Gage, Secretary, 239 Newbury St., Hartford.

Meets the 2nd Wednesday of each month, at 8:00 p.m., at 249 High St., Hartford.

New Haven Mineral Club

Mrs. Lillian M. Otersen, Sec., 16 Grove Place, West Haven.

Meets on the 2nd Monday of the month at the Y. W. C. A. on Howe St., New Haven.

IDAHO—OREGON

Snake River Gem Club

Frank S. Zimmerman, Sec., Payette, Idaho.

Meets alternately in Payette, Idaho, and Ontario, Oregon, (two small cities on the Snake River) on the 3rd Tuesday of every month.

ILLINOIS

Junior Mineral League

William Dacus, Sec., Morgan Park Junior College, 2153 W. 111th St., Chicago.

MAINE

Maine Mineralogical and Geological Society

Miss Jessie L. Beach, Sec., 6 Allen Avenue, Portland.

Meets last Friday of the month at 8 p.m., at the Northeastern Business College, 97 Danforth Street, Portland.

MASSACHUSETTS

Boston Mineral Club

Miss M. Gertrude Peet, Sec., 8 Willard St., Cambridge.

Meets on the 1st Tuesday of the month at 8:00 p.m., at the New England Museum of Natural History, 234 Berkeley St., Boston.

Connecticut Valley Mineral Club

Mary E. Flahive, Secretary, 96 South St., Florence.

Meets on the 1st Tuesday of each month at 8 p.m. at various institutions in the Connecticut Valley.

MISSOURI

National Geological Club

Mrs. D. P. Stockwell, Pres., Mt. Olympus, Kimmiswick.

NEVADA

Reno Rocks and Minerals Study Club

Mrs. Rader L. Thompson, Sec., Box 349, R2, Reno.

Meets on the 1st Wednesday of each month, at 7:30 p.m., at the Mackay School of Mines, Reno.

NEW JERSEY

Newark Mineralogical Society

Louis Reamer, Secretary, 336 Elizabeth St., Orange.

Meets on the 1st Sunday of the month at 3 p.m. at Junior Hall, corner Orange and North 6th Streets, Newark.

New Jersey Mineralogical Society

G. R. Stilwell, Sec., 1023 W. 5th St., Plainfield.

Meets on the 1st Tuesday of the month at 8 p.m. at the Plainfield Public Library.

NEW MEXICO

New Mexico Mineral Society

R. M. Burnet, Sec.-Treas., Carlsbad.

Society of Archaeology, History and Art
Carlsbad.

NEW YORK**Chislers, The**

Miss Evelyn Waite, Sponsor, 242 Scarsdale Road, Crestwood, Tuckahoe.

Queens Mineral Society

Mrs. Edward J. Marcini, Sec., 46-30—190th Street, Flushing.

Meets on the 1st Thursday of the month at 8 p.m. at 8501—118th St., Richmond Hill.

Rocks and Minerals Club of Nyack

Miss Ellen Lewin, Sec., c/o Dr. H. V. Krutz, 100 S. Broadway, Nyack.

Meets every Friday afternoon (except during summer) at 3:30 p.m. in the high school science room.

PENNSYLVANIA**Thomas Rock and Mineral Club**

Mrs. W. Hersey Thomas, Pres., 145 East Gorgas Lane, Mt. Airy, Philadelphia.

Meets on the 3rd Friday of each month, at 8:00 p.m., at the home of its president, Mrs. Thomas.

VERMONT**Mineralogical Society of Springfield**

Victor T. Johnson, Sec., 11 Elm Terrace, Springfield.

Meets on the 3rd Wednesday of each month at 8:00 p.m. at the homes of members.

WISCONSIN**Wisconsin Geological Society**

Mrs. J. O. Montague, Sec., 1026 E. Pleasant St., Milwaukee.

Meets on the 1st Monday of each month at 8:00 p.m., at the Public Museum in Milwaukee.

SOUTHERN CALIFORNIA LOCALITIES

By JACK SCHWARTZ

656 South Hendricks Ave., Los Angeles, Calif.

11. Malibu Beach.

Malibu Beach, as every movie fan knows, is a small settlement somewhere in Southern California, near Hollywood, where the movie stars have banded together, so that they might live at a beach in comparative privacy. And privacy it is, for an armed guard is ready at the entrance of the Utopia to keep anyone out without the proper pass. However, Malibu Beach is far more important to the mineralogist as perfect Selenite crystals are to be obtained there.

Luckily, the Selenite deposit does not occur in the secluded area but about one mile north, right on the U. S. Highway 101. Malibu Beach is perhaps 10 miles north of Santa Monica, which in turn is about 20 miles from Los Angeles. Of course Malibu Beach is in Los Angeles County, for after all, which part of Southern California isn't?

In order that the Roosevelt Highway (U. S. 101) might go through, road cuts in the hills were made, the cuts in the above mentioned locality being clay-like

and just chock full of crystals. On a sunny day the Selenite crystals will dazzle the looker-on.

Actual digging of the crystals is easy going and in an hour or so the collector can get all he wants. Care should be taken, when the specimens are dug out, that they be wrapped in soft paper or rags so that the pieces may not be marred on the way home. Similar crystals are illustrated in "Getting Acquainted With Minerals" by G. L. English, on pages 68 and 155.

Singular, twins, triplets, quadruplets, etc. and etc. may be mined from the clay. The collector should be wary of loading the highway with his excess, the clay could be tossed above the hillside, for the temper of a highway patrolman is not at his best, when he views the dump you are erecting, right smack on his nice clean highway.

In the hills north of this deposit, petrified wood and fossil shells are found, if one is lucky.

Club and Society Notes

ROCHESTER ACADEMY OF SCIENCE (Mineralogical Section)

The Rochester Academy of Science (Rochester, N. Y.) was incorporated May 14, 1881, as successor to the Rochester Microscopical Society. A Geological Section of the Academy was in existence as early as 1884. This section was reorganized on October 28, 1889, with E. E. Howell, Chairman; A. L. Arey, Vice-Chairman; H. L. Preston, Recorder; J. M. Davison and H. L. Fairchild members of the Sectional Committee.

The Geological Section was quite active for nearly 50 years until about 1932, when interest in both the Section and the Academy at large lapsed to the brink of dissolution. In the spring of 1935, Mr. G. L. English, then Consulting Mineralogist of Ward's Natural Science Est., Inc., proposed the formation of a Mineralogical Club. It was largely due to Mr. English's enthusiasm and efforts that on December 9, 1935, the Academy agreed to sponsor a section on technical mineralogy. J. S. Wishart was the first chairman of the Mineralogical Section. He resigned, however, on January 13, 1936. On January 27, 1936, Mr. R. C. Vance was appointed Chairman, an office which he has held to the present time. The success of the Mineralogical Section and the continuance of interest in its activities has been due to the able leadership of Mr. Vance. The officers at the time of this writing are R. C. Vance, Chairman; D. E. Jensen, Recorder; G. R. Costich, Treasurer; E. G. Foster, Chairman of the committee for recording mineral localities in Monroe County and New York State. The program committee is composed of Mr. J. E. Hartfelder with the chairman and recorder. Of the committees, listed previously, the Committee for Recording Mineral Localities under the leadership of Mr. E. G. Foster is assembling a collection of typical min-

erals of Monroe County and is collaborating with the Rochester Museum of Arts and Sciences in planning an exhibit of local minerals in its New Bausch Hall.

The location of both Ward's Natural Science Establishment and the University of Rochester in the City of Rochester made it only natural that scientists from both institutions would be deeply interested and take active part in the activities of the Geological Section of the Rochester Academy of Science and its successor the Mineralogical Section.

Prof. H. L. Fairchild, Professor Emeritus, and former head of the Geology Department of the University of Rochester, was for nearly 50 years an enthusiastic and active supporter of the Academy and its Sections and was its President for several terms. Several of his papers on the glaciation in New York State were published in the Proceedings of the Academy. Prof. Fairchild was best known to the Geological fraternity, of the East at least, as a charter member and one time president of the G. S. A. and as an authority on continental glaciation in North America. Dr. Fairchild is now in his 90's and time has placed a curtailment on his activities.

Prof. H. A. Ward, founder of Ward's Natural Science Establishment, was also an active member of the early Academy. His activities in the museum field did much to foster an early interest in mineralogy, and all other phases of geological sciences to say nothing of other scientific fields. The nuclei of many museum, school and private collections were gathered by him from all corners of the world and provided the basis and incentive for increased interest and study of Earth Sciences. Several of his papers on meteorites are published in the Proceed-

ing of the Academy.

In later years many well known geologists and mineralogists have been actively associated with the Academy. Among these were Dr. G. L. Chadwick, Mr. G. L. English, Dr. A. C. Hawkins, Mr. F. A. Ward, Mr. C. J. Sarle, Dr. R. B. Simpson. At present the membership includes Dr. H. L. Alling, Dr. J. E. Hoffmeister, Dr. Q. D. Singewald. A number of the members of the Mineralogical Section are now serving the armed forces in one capacity or another.

The Mineralogical Section holds an average of eight monthly meetings from October to May. Meetings formerly were held at Ward's Natural Science Est., and at the Eastman Bldg., University of Rochester. The March and April 1943 Meetings were held and subsequent indoor meetings will be held in the new Bausch Hall of the Rochester Museum of Arts and Sciences. Among visiting speakers in the past few years have been, Dr. N. Shreve, Dr. B. M. Shaub, Mr. A.

Montgomery, and Mr. W. McClelland. Until the summer of 1942 it has been the custom, each year, to take several short field trips to nearby-localities and one longer trip, of two or three days. The latter have included trips to St. Lawrence County, and Little Falls, N. Y., and to Vermont and New Hampshire. These trips, now cancelled for the duration, will be resumed after the war.

Texas Mineral Society

The Texas Mineral Society, a non-commercial organization, is open to anyone in Texas who is interested in collecting and studying rocks and minerals. This is a newly formed mineral club and it is growing rapidly. Dues are only \$1 a year. A monthly bulletin, *The Texas Mineral Society News Letter*, covers the activities of the Club and features many of the interesting minerals and their localities of the Lone Star State. Although the headquarters of the Society are in Dallas, its members are drawn from all over the state.

For further particulars contact the Secretary, Mrs. Viola Black, 829 W. Jefferson, Dallas 8, Texas.

Questions and Answers

Ques. "What type of mines occur on Mine Hill, N. J., and are they still in operation?" A. S., Boston, Mass.

Ans. *Magnetite mines which are still in operation.*

Ques. "Are any minerals found in my state? What are some?" L. L., New Orleans, La.

Ans. *Halite, sulphur, limonite, petrified wood are a few minerals to be found. See "Some minerals of Louisiana", in the Nov. 1942, issue of ROCKS AND MINERALS.*

Ques. "Can you tell me where I can collect graptolite specimens within easy reach of New York City?" T. N. W., Elmhurst, N. Y.

Ans. *The first graptolites described in this country came from Kenwood, near Albany, N. Y., where they occur in black shale.*

Ques. "I would like to know what minerals are found in Nebraska. I have a medium sized collection that I have obtained from dealers but would like to find a few specimens

for myself. Would like to know where a crystal is found in Nebraska". G. D. K., Omaha, Nebr.

Ans. *Nebraska is not known for minerals but some interesting specimens have been found. Nice crystals of celestite occur at Wymore, Gage Co. Agates have been found at Linwood, Butler Co.; opalized wood in the Bad Lands; small quartz crystals occur lining geodes in the Florence flint of Gage Co. In this issue of ROCKS AND MINERALS, Ward's Natural Science Est., of Rochester, N. Y., advertise selenite crystals from Nebraska. In the September issue of ROCKS AND MINERALS we plan to print an article on some minerals of Nebraska—watch for it!*

Ques. "I am interested in jade. Has ROCKS AND MINERALS published any articles on this mineral and if so in what issues?" R. A., San Francisco, Calif.

Ans. *We have printed five articles. See page 23 of "Price List of Back Numbers of ROCKS AND MINERALS" which is sent you under separate cover.*

With Our Dealers

E. Mitchell Gunnell, of Denver, Colo., is with us again. Among the rare minerals he is offering collectors is a superbly beautiful xline gold leaf from Colorado! We wonder which fortunate collector will add this remarkably fine specimen to his collection?

Chas. O. Fernquist, of Spokane, Wash., has opened a mineral store in his city. His stock consists of choice minerals, gem stones, Chinese carved figures, books, the Mineralight, and lapidary supplies. Our best wishes are extended him! But he needs more than good wishes. Let us encourage him with a nice order from each reader!

John A. Grenzig, of Brooklyn, N. Y., has sold his fine mineral cabinet to a collector in Massachusetts. It pays to advertise in **ROCKS AND MINERALS**! And he is going to sell many copies of the fine books he is advertising in this issue. If you will read his ad, you may become one of the fortunate purchasers.

Jno. B. Litsey, of Dallas, Texas, has in stock a number of specimens of molybdenite which he is offering collectors this month. Molybdenite, as a general rule, occurs as small flakes in rusty quartz—a most unattractive specimen. But the specimens in Mr. Litsey's stock are sparkling ores which are made more attractive by canary yellow patches of ferri-molybdate.

Mineral Supply House, of Spokane, Wash., are again featuring western minerals. One of the most interesting minerals found in Washington is boulangerite from the Cleveland Mine. This is the first item featured in their ad. Gosh, you must order it!

V. D. Hill, of Salem, Ore., has just issued another attractive catalog—No. 17. The catalog is 36 pages in length, contains many nice illustrations, and is stuffed with choice items for the collector amateur cutter, and gem lover. It's free—so order your copy today!

Schortmann's Minerals, of Easthampton, Mass., carry a complete line of the many models of the Mineralight, the sensational U. V. lamp. Whether for the laboratory, prospector, or for the average collector's use, Schortmann's Minerals can supply the right type for your needs. You don't have to take our word for it—read their ad and be convinced!

Warner & Grieger, of Pasadena, Calif., are always planning for the future—not only for themselves but even for their huge number of friends and customers. As an example, in this issue of **ROCKS AND MINERALS** they are featuring attractive Christmas gifts for those in the armed service of our country. Surely you will want to remember some boy or girl, or two, three, or four of them, this Christmas! Let Warner & Grieger help you to decide what gifts to send.

Dear Ward's, Rochester, N. Y. "Please rush me a \$2 specimen of an amber colored selenite from Nebraska that fluoresces a beautiful bright yellow color! I have been trying for years to get a nice specimen from Nebraska and if your specimen reaches me then my quest will be over and I can live in peace and contentment. P. S. Saw your ad in the Sept., 1943, **ROCKS AND MINERALS**". Anxious Andy.

The Geology of Spring Mountain

(Continued from Page 273)

All in all, there is much of geological interest in Spring Mountain and its immediate vicinity. As we look about us we can see many things that tell us much about what has gone before. These clues to the past offer a challenge to geologist and layman alike. Perhaps we shall never have the complete picture, but we may safely assume that as time passes we will learn more and more about the things that happened in a remote period of our earth's history by merely keeping our eyes open. Go forth and see.

Thrilled to Read R & M!

Editor R & M:

I wish to thank you for your splendid magazine, **ROCKS AND MINERALS**. It always gives me a great thrill to read the new issue when it arrives. And from your advertisers I have obtained a number of very good books on gems, minerals, and prospecting.

I would like to see more articles published like "Pegmatites", by David M. Seaman, which appeared in the July issue. Articles of this nature are truly informative and of great benefit to prospectors.

B. Keystra,
Prairie River, Sask., Canada.

July 24, 1943.

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